



**PB Energy
Storage
Services, Inc.**

ENGINEERING - CONSTRUCTION - OPERATIONS - MAINTENANCE

SPECIFICATION

Number 50665B

**MECHANICAL INTEGRITY TEST
PROCEDURE FOR CLASS III SALT
SOLUTION MINING WELLS USING
MODIFIED EPA INTERFACE METHOD**

Date 2/2/06

Page 1 of 3

1.0 INTRODUCTION

This program presents the proposed steps for completing a modified water/brine interface EPA approved Mechanical Integrity Test (MIT) for the Duke Energy Gas Transmission (DEGT)/Virginia Gas Company brine wells CH-13B and 14A. These steps are intended as a guideline for the MIT. Actual conditions encountered during the work will dictate the appropriate action to be taken. Any significant deviation from the proposed program will require prior approval by DEGT and PB ESS.

The purpose of the Mechanical Integrity Test (MIT) procedure is to test the mechanical integrity of the underground storage cavern to determine the suitability for leaching operations. In summary, the test procedure consists of the following basic steps: Fill the cavern with brine and pressure up to approximately 275 psi, allow the cavern to stabilize; inject a volume of diesel blanket material in each well sufficient to place the diesel/brine interface in the borehole below the casing shoe but above the cavern roof, and record wellhead pressures for a given test period to evaluate the integrity of the wells. (See attached well schematics.)

Reference 40 CFR Part 146, Water Brine Interface Mechanical Integrity Test for Class III Salt Solution Mining Injection Wells. The EPA procedure was modified to better represent the operating conditions with a diesel blanket at the roof of the cavern.

2.0 PREPARATION

2.1 Provide a connection to allow for the injection of brine through the 4-1/2" wash string.

2.2 Install pressure-monitoring equipment on well connections to allow continuous monitoring of diesel and brine wellhead pressures.

NOTE: Digital pressure recorders and a deadweight tester (digital or standard) utilized for the mechanical integrity test shall be calibrated in accordance with manufacturer specifications and traceable to National Bureau of Standard.

2.3 Provide a top connection on the wellhead (2" I.D. minimum) to permit installing a wireline lubricator for well logging, if required.

2.4 Provide a connection to allow for the injection of diesel blanket material.

2.5 Pre-pressure the cavern by injecting brine into the 4-1/2" hanging string of one well. Monitor pressures at both wells and measure and record the volume of brine injected and specific gravity of brine samples injected. Pressurize the cavern to approximately 375 psig. Allow the cavern to stabilize. See attached Well MIT data sheets for estimated brine test pressures.

2.6 Fill a frac tank with diesel and rig up a pump truck with meter to inject diesel into one well. Inject the required volume of diesel to fill the 9-5/8" x 4-1/2" annulus to the casing shoe. Inject an additional volume of diesel to place the interface in the borehole below the casing shoe. (See attached MIT Well Schematics Wells CH-13B and 14A for diesel volumes.) This volume should place the diesel/brine interface approximately 40' below the casing shoe in the borehole annulus. Injection rates should be kept to a minimum to prevent mixing of wellbore fluids. Injected volume to be metered or determined by tank

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volume. Diesel test pressure must be greater than the normal operating pressure of the diesel blanket during leaching. Repeat diesel injection for the second well.

- 2.7 Measure and record the volume of diesel injected and the wellhead pressures at 5-minute intervals.
- 2.8 Wait a minimum of 36 hours for temperature stabilization before initializing the test. Wellhead pressures and surface temperatures should be continuously monitored during the stabilization period. Digital recording equipment to collect pressure samples on 5-minute intervals.

3.0 TEST PERIOD

- 3.1 Monitor the wellhead pressures for the test well (9-5/8" X 4-1/2" annulus) and the reference well (4-1/2" casing) continuously during the test period for each well. Digital recording equipment to collect pressure samples on 5-minute intervals.
- 3.2 Report and record wellhead pressures each hour for an 8-hour test period after the temperature stabilization period.
- 3.3 Calculate the net pressure change for each hour interval using the following equations:

INITIAL TEST PRESSURE CALCULATION

$$P_{Initial} = P_{StartTestWell} - P_{StartReferenceWell}$$

FINAL TEST PRESSURE CALCULATION

$$P_{Final} = P_{EndTestWell} - P_{EndReferenceWell}$$

NET PRESSURE CHANGE RATE CALCULATION

$$NPCR = \frac{(P_{Initial} - P_{Final})}{TestLength}$$

Calculate the pressure change for each hourly test period and for the entire 8-hour test period.

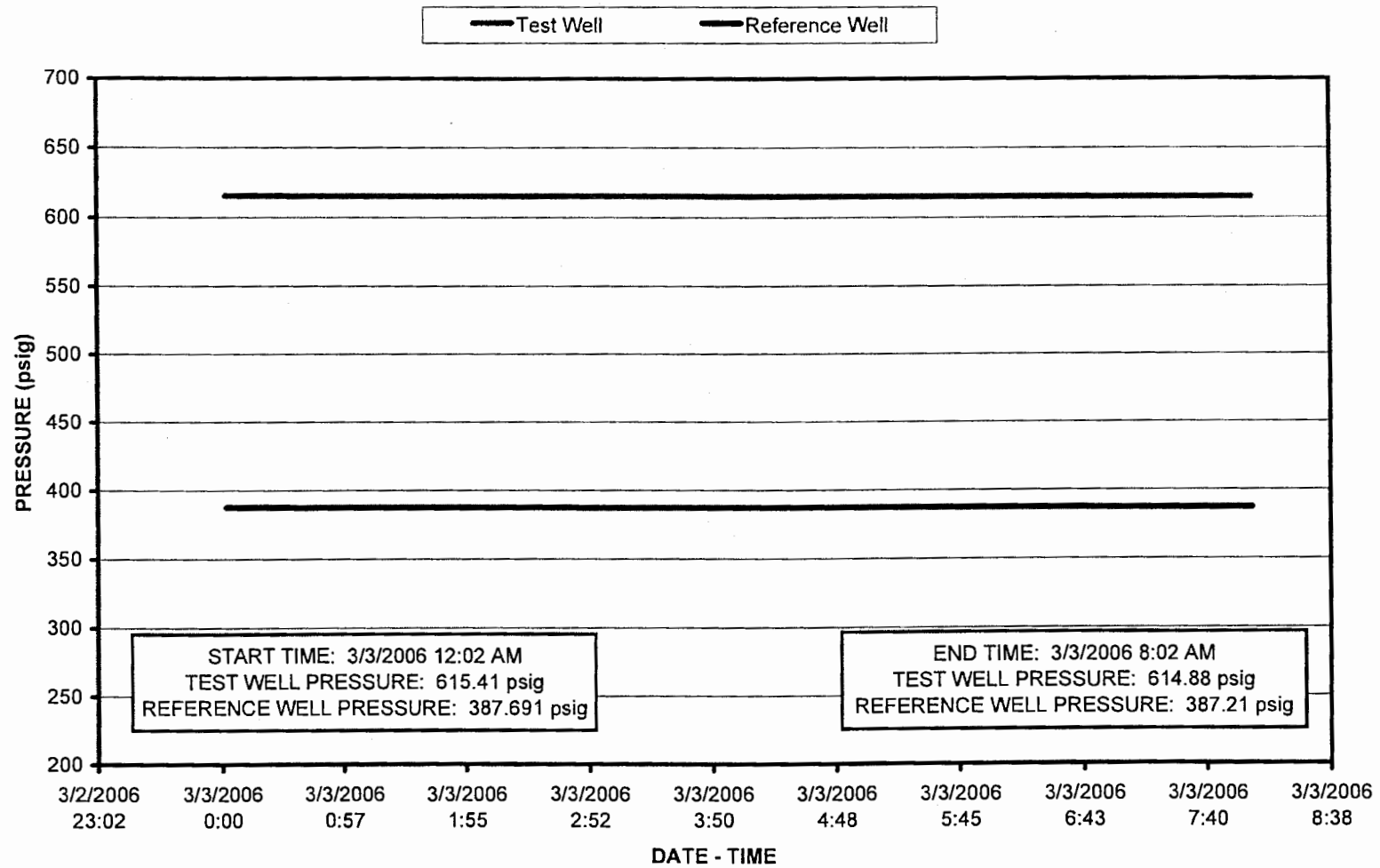
- 3.4 Well has demonstrated mechanical integrity if the Net Pressure Change Rate (NPCR) is less than 0.05 psi/hr. Present the data in a standard format.
- 3.6 Determine the duration of the test using the appropriate test data and calculations.

4.0 TEST INITIALIZATION

- 4.1 Record the test and reference wellhead pressures with a digital pressure recorder at the start of the test. Digital pressure recorder to sample the wellhead pressures in 5-minute intervals.
- 4.2 Calculate the NPCR for the last test interval to determine if the test period should begin.

PREPARED BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE	REVISION	DATE
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MIT SALTVILLE BRINE WELL CH-14A



Mechanical Integrity Test Sheet

Date	March 3, 2006
Location	Virginia Gas/Duke Energy - Saltville, Va.
Well	Brine Well CH-14A
Comments:	MIT using EPA Water/Brine Interface Method - Modified for Diesel/Brine Interface

Test Well			Reference Well	
9-5/8"x4-1/2" Annulus (Diesel)			4-1/2" Tubing (Brine)	
Time	Pressure		Time	Pressure
0:02	615.408		0:02	387.69
1:02	615.265		1:02	387.553
2:02	615.175		2:02	387.488
3:02	615.154		3:02	387.446
4:02	615.09		4:02	387.399
5:02	615.058		5:02	387.358
6:02	614.966		6:02	387.297
7:02	614.934		7:02	387.266
8:02	614.884		8:02	387.213

TEST PERIOD	2-HOUR NPCR
Test Period 1	0.016
Test Period 2	-0.002
Test Period 3	0.011
Test Period 4	-0.001
8 Hour Test	0.006



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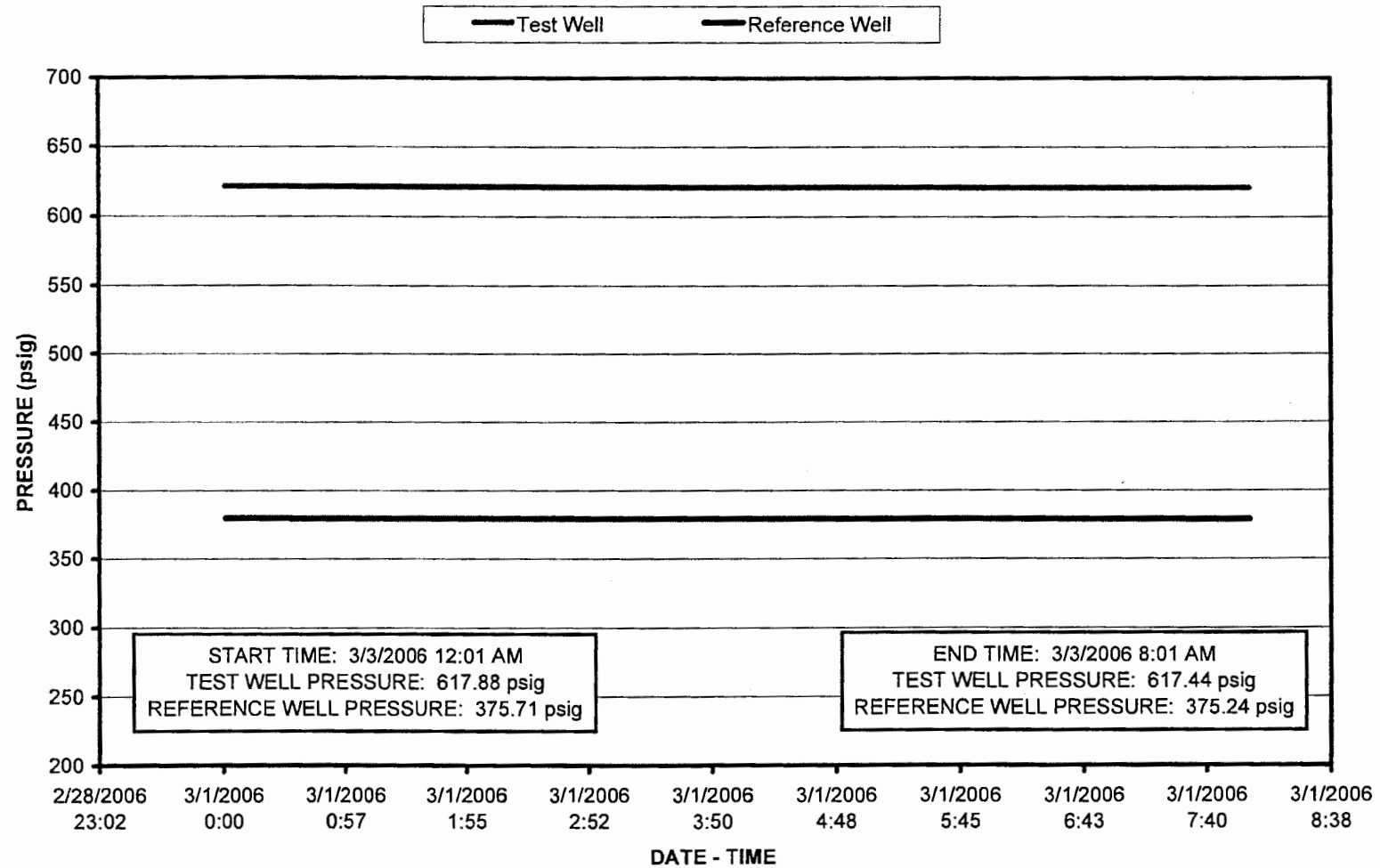
Signatures

PB ESS Approval

Tim M. [Signature]

Operator Approval

MIT SALTVILLE BRINE WELL CH-13B



Mechanical Integrity Test Sheet

Date	March 3, 2006
Location	Virginia Gas/Duke Energy - Saltville, Va.
Well	Brine Well CH-13B
Comments:	MIT using EPA Water/Brine Interface Method - Modified for Diesel/Brine Interface

Test Well		Reference Well	
9-5/8"x4-1/2" Annulus (Diesel)		4-1/2" Tubing (Brine)	
Time	Pressure	Time	Pressure
0:01	617.88	0:01	375.712
1:01	617.764	1:01	375.598
2:01	617.709	2:01	375.538
3:01	617.661	3:01	375.49
4:01	617.622	4:01	375.447
5:01	617.604	5:01	375.387
6:01	617.555	6:01	375.34
7:01	617.514	7:01	375.293
8:01	617.435	8:01	375.241

TEST PERIOD	2-HOUR NPCR
Test Period 1	-0.001
Test Period 2	-0.002
Test Period 3	-0.020
Test Period 4	0.011
	8-HOUR NPCR
8 Hour Test	-0.003



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Signatures

PB ESS Approval

Operator Approval

WELL CH-14A

$$P_{Start} = P_{StartTestWell} - P_{Start Re fWell}$$

$$P_{Start} = 615.408 \text{ psig} - 387.69 \text{ psig}$$

$$P_{Start} = 227.718 \text{ psi}$$

$$NPCR = \frac{(P_{Start} - P_{End})}{TestLength}$$

$$8\text{-}HO\text{UR TEST NPCR} = 0.006 \text{ psi / hour}$$

$$Test \text{ Gradient} = 0.756 \text{ psi/ft to } 9\text{-}5/8'' \text{ production casing shoe @ } 1586'$$

$$P_{End} = P_{EndTestWell} - P_{End Re fWell}$$

$$P_{End} = 614.884 \text{ psig} - 387.213 \text{ psig}$$

$$P_{End} = 227.671 \text{ psi}$$

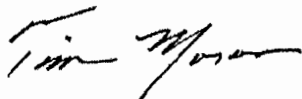
$$NPCR = \frac{(227.718 \text{ psi} - 227.671 \text{ psi})}{8 \text{ hours}}$$

Note: Test gradient calculations assume diesel specific gravity = 0.85.

Both Saltville Brine Wells CH-13B and CH-14A have met the EPA criteria for a successful mechanical integrity test for Class III salt solution mining injection wells, i.e. the calculated NPCR for an 8-hour test is less than 0.05 psi/hr. Also, test results indicated NPCR's of less than 0.020 psi/hr for the 2-hour test intervals for each well. (See attached Test Sheets.)

If you have any questions regarding the processed MIT data for these wells, please call or e-mail me.

Sincerely,



Tim Moran
Manager of Engineer

Attachments

CC: PB ESS File w/attachments



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March 9, 2006

Mr. Scott Hill
Virginia Gas Company/Duke Energy
1096 Ole Berry Dr.
Abingdon, Va 24210

Re: Mechanical Integrity Test Results for Saltville Brine Wells CH-13B and CH-14A

Dear Mr. Hill:

PB Energy Storage Services, Inc. (PB ESS) has completed processing the Mechanical Integrity Tests (MIT) data for Saltville Brine Wells CH-13B and CH-14A. The wells were tested using the EPA water/brine interface method modified for diesel/brine interface. The following documents are attached:

- Mechanical Integrity Test Data for Well CH-13B – Test Sheet and Pressure Graph
- Mechanical Integrity Test Data for Well CH-14A – Test Sheet and Pressure Graph
- EPA approved MIT procedure used for the MIT, with well schematics for each well.

TEST CHRONOLOGY

Virginia Gas pressured the two-well cavern gallery by injecting brine into Well CH-14A. Brine injection was started on February 21, 2006 and ended on February 23, 2006 with the Well CH-14A wellhead pressure at approximately 385 psig (by gauge). Well CH-13B wellhead pressure was approximately 360 psig (by gauge). The wells were shut in and the cavern was allowed to stabilize.

PB ESS installed digital recorders on each of the wells to read both 9-5/8"x4-1/2" annulus and 4-1/2" tubing pressures. Well Test Solutions SDS Series 3000 digital pressure recorders were used. These recorders are capable of measuring pressures to .001 psi with an accuracy of 0.024% FS and a pressure resolution of 0.0003% FS. Data sampling rates were set at 5 minute intervals. On February 27, 2006, 96 bbls of diesel was injected into the annulus of Well CH-14A and 95 bbls was injected into the annulus of Well CH-13B. These injected diesel volumes placed the diesel/brine interface below the casing shoe of each well. (Refer to MIT procedure well schematics). The wells were then shut in and allowed to stabilize. Virginia Gas downloaded the digital data daily and e-mailed the files to PB ESS for analysis. Analysis of pressure data for March 3, 2006 indicated a successful 8-hour test for both wells.

TEST RESULTS

The EPA procedure specifies that a well demonstrates mechanical integrity when the Net Pressure Change Rate (NPCR) is below 0.05 psi/hr over an 8-hour period. The following are the NPCR calculations for each well, derived from the attached test data sheets.

WELL CH-13B

$$P_{Start} = P_{StartTestWell} - P_{StartReflowWell}$$

$$P_{Start} = 617.88 \text{ psig} - 375.712 \text{ psig}$$

$$P_{Start} = 242.168 \text{ psi}$$

$$NPCR = \frac{(P_{Start} - P_{End})}{TestLength}$$

$$8\text{-HOUR TEST NPCR} = -0.003 \text{ psi / hour}$$

$$Test Gradient = 0.749 \text{ psi/ft to 9-5/8" production casing shoe @ 1621'}$$

$$P_{End} = P_{EndTestWell} - P_{EndReflowWell}$$

$$P_{End} = 617.435 \text{ psig} - 375.241 \text{ psig}$$

$$P_{End} = 242.194 \text{ psi}$$

$$NPCR = \frac{(242.168 \text{ psi} - 242.194 \text{ psi})}{8 \text{ hours}}$$



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5.0 TEST FINALIZATION

- 5.1 Record the test and reference wellhead pressures with a digital pressure recorder at the end of the test period.
- 5.2 Calculate the NPCR for each test interval and the test period.

6.0 REPORT ON TEST RESULTS

- 6.1 Prepare a written report presenting test procedures, results and conclusions, along with a chronology of test activity, wellhead pressure records, and supporting calculations.

PREPARED BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE	REVISION	DATE
Tim Moran	2/2/06	Frank Jurica	2/2/06	Roger Blair	2/2/06	2	2/20/06

M.I.T. WELL DATA SHEET

Rev. 2

1.0 WELL DESCRIPTION

1.1 Well Name	WELL #14A	
1.2 Operator	Virginia Gas	
1.3 Location	Field	Saltville
	County	Smyth
	State	Virginia
1.4 Cemented Production Casing	Size O.D.	9.625 inches
	Size I.D.	8.921 inches
	Depth	1586 feet
	Weight	36.00 lbs/ft
1.5 Brine Casing	Size	4.5 inches
	Depth	1780 feet
	Weight	11.6 lbs/ft
1.6 Total Depth	1786 feet	

2.0 TEST PRESSURES

2.1 Casing Seat Depth	1586 feet
2.2 Test Gradient	0.75 psi/ft
2.3 Brine Specific Gravity (Assumed)	1.20
2.4 Product Specific Gravity (Diesel)	0.85
2.5 Product Temperature	70 deg F
2.6 Interface Elevation	1626 feet
2.7 Casing Shoe Pressure	1190 psi
2.8 Surface Brine Pressure	359 psi
2.9 Surface Product Pressure	605 psi

3.0 VOLUME ESTIMATE

3.1 Total Volume To Casing Shoe	91 Bbls.
3.2 Volume From Casing Shoe to Interface	5 Bbls.
3.3 Total Product Required	96 Bbls.

4.0 COMPRESSIBILITY RESPONSE

4.1 Cavern Volume (estimate)	2,200,000 bbls
4.2 Displacement To Interface (Total 13B + 14A)	191 bbls
4.3 Cavern Compressibility	6.67 bbls/psi
4.4 Cavern Pressure Increase Due To Product Injection	14 psi
4.5 Cavern Pressure With Brine	345 psi
4.6 Brine Volume (estimate)	2300 bbls

M.I.T. WELL DATA SHEET

Rev. 2

1.0 WELL DESCRIPTION

1.1 Well Name	WELL #13B	
1.2 Operator	Virginia Gas	
1.3 Location	Field	Saltville
	County	Smyth
	State	Virginia
1.4 Cemented Production Casing	Size O.D.	9.625 inches
	Size I.D.	8.921 inches
	Depth	1621 feet
	Weight	36.00 lbs/ft
1.5 Brine Casing	Size	4.5 inches
	Depth	1765 feet
	Weight	11.6 lbs/ft
1.6 Total Depth	1773 feet	

2.0 TEST PRESSURES

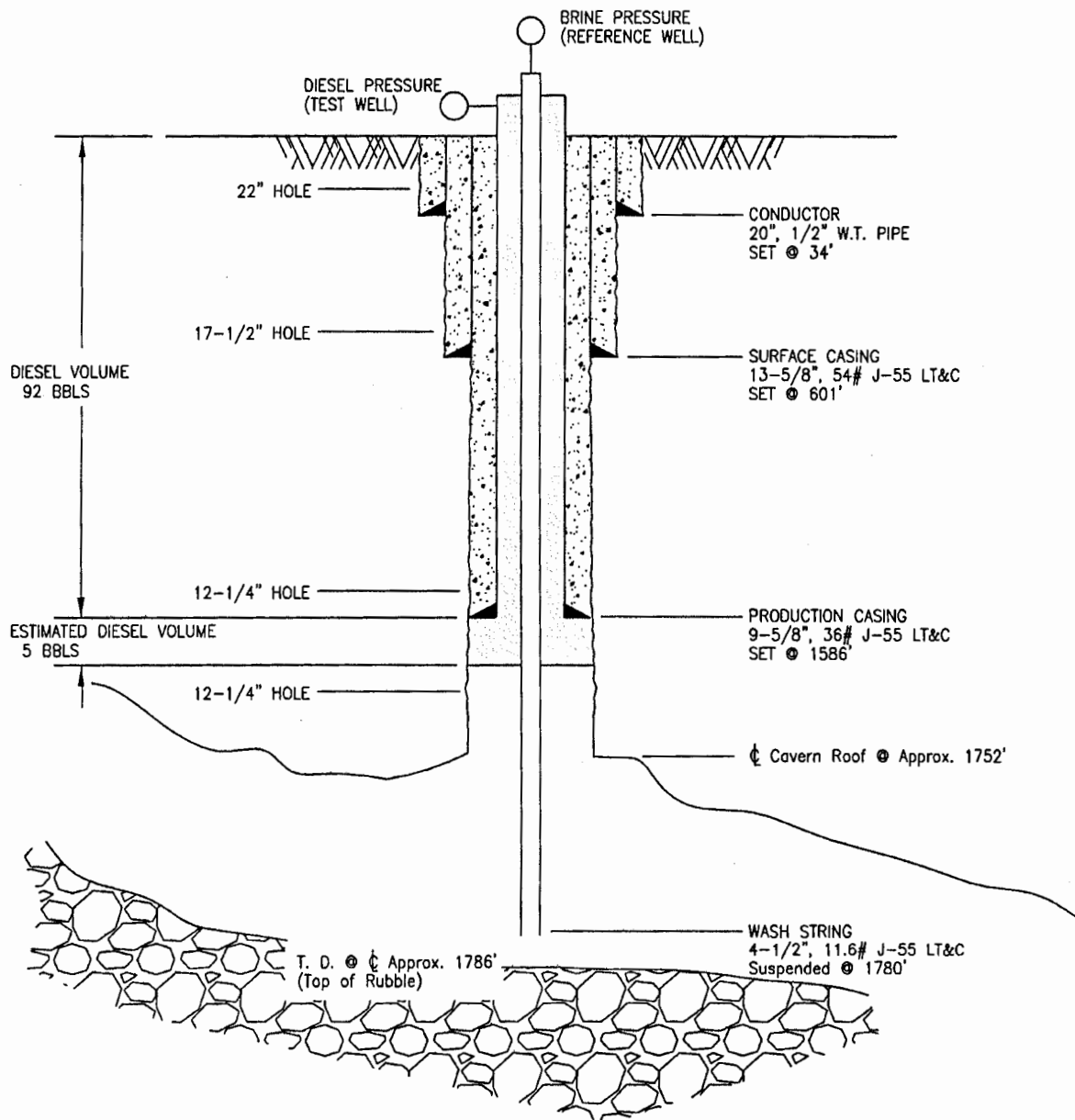
2.1 Casing Seat Depth	1621 feet
2.2 Test Gradient	0.75 psi/ft
2.3 Brine Specific Gravity (Assumed)	1.20
2.4 Product Specific Gravity (Diesel)	0.85
2.5 Product Temperature	70 deg F
2.6 Interface Elevation	1661 feet
2.7 Casing Shoe Pressure	1208 psi
2.8 Surface Brine Pressure	359 psi
2.9 Surface Product Pressure	611 psi

3.0 VOLUME ESTIMATE

3.1 Total Volume To Casing Shoe	93 Bbls.
3.2 Volume From Casing Shoe to Interface	2 Bbls.
3.3 Total Product Required	95 Bbls.

4.0 COMPRESSIBILITY RESPONSE

4.1 Cavern Volume (estimate)	2,200,000 bbls
4.2 Displacement To Interface	95 bbls
4.3 Cavern Compressibility	6.67 bbls/psi
4.4 Cavern Pressure Increase Due To Product Injection (See 14A)	psi
4.5 Cavern Pressure With Brine (See 14A)	psi
4.6 Brine Volume (estimate See 14A)	0 bbls



Notes:

1. All depths measured from BHF.
2. Reference PB ESS daily drilling reports.

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DUKE ENERGY GAS TRANSMISSION
VIRGINIA GAS COMPANY
SALTVILLE, VIRGINIA

SALTVILLE WELL CH-14A
MIT WELL SCHEMATIC

JOB No.
50665B

DRAWING No.
50665B-LC-002

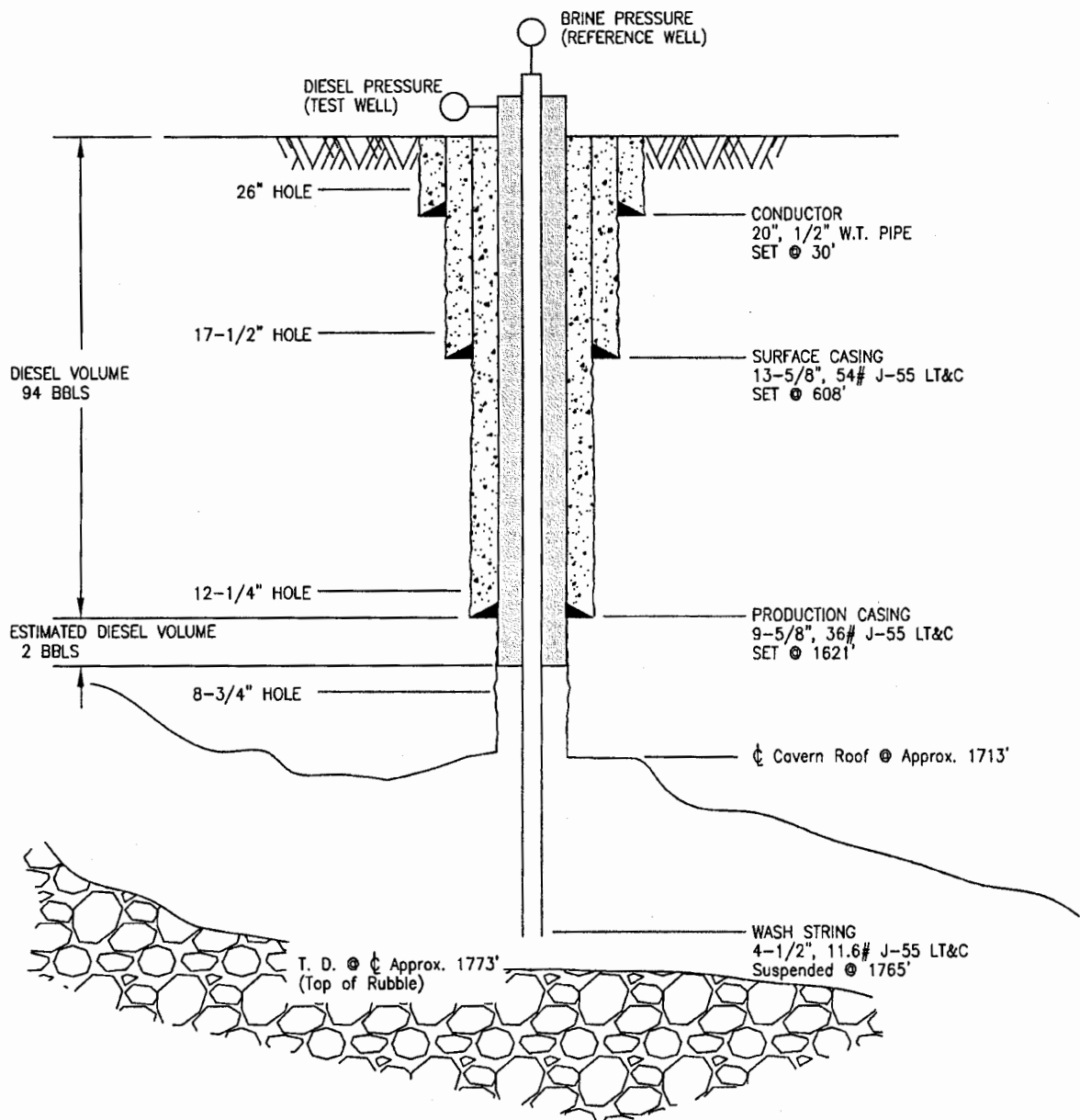
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DATE: 1/06

SCALE: NONE



Notes:

1. All depths measured from BHF.
2. Reference PB ESS daily drilling reports.

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DUKE ENERGY GAS TRANSMISSION
VIRGINIA GAS COMPANY
SALTVILLE, VIRGINIA

SALTVILLE WELL CH-13B
MIT WELL SCHEMATIC

JOB No.
50665B

DESIGN: TM


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CHECKED: TM

DATE: 2/06

SCALE: NONE

DRAWING No.
50665B-LC-004

 PB Energy Storage Services, Inc. <small>ENGINEERING • CONSTRUCTION • OPERATIONS • MAINTENANCE</small> <small>A Parsons Brinckerhoff Company</small>	SPECIFICATION		Number 50655A	
	VIRGINIA GAS/DUKE ENERGY SALTVILLE FACILITY REENTRY BRINE WELLS CH-13A & CH-14A DRILLING PROGRAM		Date 11/16/05	
			Page 1 of 4	

INTRODUCTION

This program presents the program for the drilling of two re-entry wells in the Saltville Storage Field. The Saltville Storage Field is operated by Virginia Gas/Duke Energy. The purpose for drilling these two wells is to re-enter an existing salt cavern gallery for brine production. This program presents objectives, assumptions, and a proposed drilling plan. This document serves as an outline and a guide to all field activities. The completion of field activities may require additional information and resources not outlined in this document. All changes to this scope and additionally activities will require the notification and approval of Virginia Gas/Duke Energy.

PROJECT CONTACT INFORMATION

Scott Hill – Virginia Gas/Duke Energy Manager

- Office – (276) 676 2380
- Cell – (276) 623-6244

Tim Moran – PB Energy Storage Services, Inc. Project Manager

- Office – (281) 589-5823
- Cell – (281) 382-9489

Mark Hansen – PB Energy Storage Services, Inc. Procurement Manager

- Office – (281) 589-5828
- Cell – (281) 414-0952

Tommy Musselwhite – PB Energy Storage Services, Inc. Field Supervisor

- Cell (713) 703-5367

DRILLING PROGRAM

1.0 Permits

Ensure all appropriate local, state, and federal permits have been submitted


2.0 Pre-spud Meeting


Obtain VG/Duke approval prior to starting drilling activities – hold a pre-spud/drill meeting with principal parties and vendors via conference call


3.0 Prepare Location and Cavern

1. Clear out area for rig
2. Survey the drilling locations
3. Ensure that the EPA is notified of intent to drill

PREPARED BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE	REVISION	DATE
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<p>4. Ensure that cavern pressure has been bled down to atmospheric from Wells CH-13 & 14.</p> <p>4.0 Drilling Activities</p> <ol style="list-style-type: none"> 1. Move in and rig up an appropriate sized drilling rig 2. Install mud system and mix up drilling fluids. 3. Drill a 24" hole to 40' +/- 4. Run and cement 20" conductor casing 5. Wait on cement 12 hours 6. Install a 20" 3M X 13-5/8" temporary SOW flange 7. Install 20" 3M 3M Hydril 8. Test casing to 30 psi for 30 minutes. A 10% drop (6 psi) is allowable 9. Test Hydril (low pressure and high pressure) 10. Drill out cement and drill 17-1/2" hole to 600' +/-. 11. Run an X-Y caliper to determine hole size and run GR/N log. 12. Run and cement 13-3/8" casing using 50% excess above calculated volume 13. Remove 20" 3M flange 14. Install 13-5/8" 2M casinghead flange 15. Install 13-5/8" 2M X 13-5/8" 3M DSA 16. Install 13-5/8" 3M Hydrill 17. Wait on cement 24 hours 18. Test casing to 250 psi for 30 minutes. A 10% drop (25 psi) is acceptable. 19. Drill out cement and drill 12-1/4" hole 10' below 13-3/8" casing shoe. 20. Circulate the hole clean. 21. Rig up to drill with air then blow hole dry. 22. Continue air drilling 12-1/4" hole to approximately 1500'. (The approximate depth of 13-3/8" casing in CH-13 & 14). 23. Drill remaining hole with brine. 24. Drill 12-1/4" hole into the cavern. Extreme care should be taken when nearing the anticipated cavern roof at 1750' +/- 25. Rig up wireline unit and run GR/N and X-Y caliper logs. 				
PREPARED BY M. Slezak	DATE 11/16/05	CHECKED BY T. Moran	DATE 11/16/05	APPROVED BY T. Moran
		DATE 11/16/05		REVISION 0
				DATE

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<p>26. Based on the results from these logs, set a PIP inflatable bridge plug as close to the cavern roof as possible.</p> <p>27. Spot 10 to 20 feet of sand on PIP</p> <p>28. Spot 50 feet of cement on top of sand. (Use same cement mix as upper and lower bench wells.)</p> <p>29. Wait on cement 12 hours.</p> <p>30. Tag cement with workstring and test to 500 psi for 30 minutes</p> <p>31. Run in hole with 9-5/8" casing to 20 feet above cement.</p> <p>32. Cement to surface with 150% of calculated volume. Use same cement mix as Upper and Lower Bench wells.</p> <p>33. Wait on cement minimum 48 hours. (Check cementing contractor recommendation)</p> <p>34. Test casing to 500 psi for 30 minutes. A 10% (50 psi) loss or less is acceptable.</p> <p>35. Drill out cement.</p> <p>36. Wash out sand and recover PIP. (Note: If PIP cannot be recovered, burn over and push into cavern.)</p> <p>37. Rig up wireline unit and run a cement bond log and cavern sonar survey.</p> <p>38. Nipple up casing head spool.</p> <p>39. Run in hole with 4-1/2" to top of rubble</p> <p>40. If it is necessary to drill 4-1/2" casing into the rubble</p> <ul style="list-style-type: none"> • Run casing in with bit and float sub. • Rotate into rubble with minimum weight to desired depth or point of refusal. • Rig up wireline and perforate 4-1/2" casing above float. <p>41. Nipple up remainder of wellhead</p> <p>42. Rig down and move out.</p>						
PREPARED BY M. Slezak	DATE 11/16/05	CHECKED BY T. Moran	DATE 11/16/05	APPROVED BY T. Moran	DATE 11/16/05	REVISION 0

 PB Energy Storage Services, Inc. <small>CONSTRUCTION - CONSTRUCTION - OPERATIONS - MAINTENANCE</small> <small>A Parsons Brinckerhoff Company</small>	SPECIFICATION		Number 50655A				
	VIRGINIA GAS/DUKE ENERGY SALTVILLE FACILITY REENTRY BRINE WELLS CH-13A & CH-14A DRILLING PROGRAM		Date 11/16/05				
			Page 4 of 4				
SAFETY <ul style="list-style-type: none"> ▪ Port-a-lets should be spotted on location prior to start of drilling operations and maintained throughout the project ▪ MSDS should be on location with workover supervisor prior to start of activity. All personnel must be aware of MSDS location(s) ▪ Emergency showers and eye wash stations must be on location throughout workover ▪ All safety incidents are to be reported, documented, and investigated by PB ESS and VNG/Duke ▪ All PPE to include hard hat, steel toe boots, and safety glasses ▪ Smoking in designated areas only ▪ Daily safety (tailgate) meeting to review the daily work activities and safety hazards ▪ Prepare specifications and reporting requirements for all pressure tests and function tests ▪ Site supervisor to prepare and submit daily field activity reports and cost estimates 							
PREPARED BY M. Slezak	DATE 11/16/05	CHECKED BY T. Moran	DATE 11/16/05	APPROVED BY T. Moran	DATE 11/16/05	REVISION 0	DATE

**U.S. EPA REGION III
MECHANICAL INTEGRITY TEST RESULT
PRESSURE TEST**

COMPANY NAME

TEXAS BRINE COMPANY SALTVILLE, LLC

LEASE NAME

SALTVILLE HIGH PRESSURE BRINE FIELD

FACILITY ID

VAS36931BSMY

WELL NUMBER

WELL 131

DATE

NOVEMBER 29, 2011

ANNULUS OR TUBING STRING TESTED

8 5/8" CASING

DEPTH PACKER OR BRIDGE PLUG SET

2340'

TIME 10:52 (BEGINNING)

TIME 10:22 (END)

RECORDING DEVICE

GAUGE TEST GAUGE

INITIAL TEST PRESSURE

695 694

FINAL TEST PRESSURE

675 673

MULTIPLY THE INITIAL TEST PRESSURE BY .05 AND SUBTRACT FROM THE INITIAL TEST PRESSURE.

INITIAL TEST PRESSURE		<u>694</u>
- INITIAL TEST PRESSURE X .05	-	<u>35</u>
RESULT	=	<u>659</u>

THE WELL PASSES MECHANICAL INTEGRITY IF THE FINAL TEST PRESSURE EXCEEDS THE RESULT CALCULATED ABOVE

TEST RESULT: **PASSED** ☒ **FAILED** ☐

COMMENTS: DIRECT PRESSURE TEST ON 8 5/8" CASING PRIOR TO WHIPSTOCK AND CUTTING WINDOW IN 8 5/8".

SIGNATURE OF COMPANY REPRESENTATIVE

David P. Schmitt

SIGNATURE OF EPA REPRESENTATIVE

Dan R. Rector

TEXAS BRINE COMPANY SALTVILLE, LLC

4800 San Felipe
Houston, Texas 77056

Office: (713) 877-2700
Fax: (713) 877-2605

March 23, 2009

Mr. Stephen Platt
US EPA, Region 3
Groundwater and Enforcement Branch
1650 Arch Street
Philadelphia, PA 19103

Federal Express

Re: Texas Brine Company Saltville, LLC
Well No. 1 Completion Form
Authorization to Produce

Dear Mr. Platt:

Please find enclosed the following information related to the completion of our Well # 1 at Saltville:

1. Platform Express, Lithodensity/ Compensated Neutron, Array Induction Log
(0 - 1587')
2. Platform Express, Lithodensity/ Compensated Neutron, Array Induction Log
(1587 - 4045')
3. Platform Express, Lithodensity/ Compensated Neutron, Array Induction Log
(2230 - 3662')
4. TBCS Well # 1 Casing Schematic Diagram
5. Chart Recording – Mechanical Integrity Test on Tubing

Start 2-28-09	346 psi	1 hour duration
End 2-28-09	345 psi	
6. Chart Recording – Mechanical Integrity Test on Casing

Start 2-28-09	254 psi	1 hour, 15 minutes duration
End 2-28-09	256 psi	

7. Chart Recording – Mechanical Integrity Test on Diesel Seal

Start 2-28-09	292 psi	30 minutes duration
End 2-28-09	285 psi	

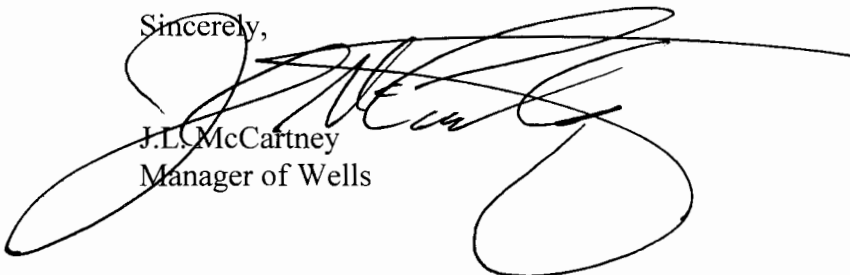
8. EPA Form 7520-9 (Rev. 8-01)

Attachments:

- A. Well schematic included above
- B. Mechanical Integrity Method and Results
 - 1. Tubing – Pressured up tubing to 346 psi and held pressure for one hour. Pressure dropped one psi to 345 psi.
 - 2. Casing - Pressured up casing to 254 psi and held pressure for one hour and 15 minutes. Pressure increased two psi to 256 psi.
 - 3. Diesel Seal - Pressured up seal to 292 psi and held pressure for 30 minutes. Pressure dropped seven psi to 285 psi.
- C. Attached above are geophysical logs requested.
- D. There are no defective wells in the area of review.
- E. Copies of logs enclosed.

Your timely review of this paperwork would be appreciated. We look forward to your response and authorization to put this well on permanent production status. Should have any questions regarding the above, please let us know.

Sincerely,


J.L. McCartney
Manager of Wells



United States Environmental Protection Agency
Washington, DC 20460

Completion Form For Injection Wells

Administrative Information

1. Permittee

Texas Brine Company Saltville, LLC

Address (Permanent Mailing Address) (Street, City, and ZIP Code)

4800 San Felipe
Houston, Texas 77056

2. Operator

Texas Brine Company Saltville, LLC

Address (Street, City, State and ZIP Code)

4800 San Felipe
Houston, Texas 77056

3. Facility Name

Saltville

Telephone Number

713-877-2700 / 276-496-3363

Address (Street, City, State and ZIP Code)

864 Ader Lane
Saltville, Virginia 24370

4. Surface Location Description of Injection Well(s)

State

Virginia

County

Smyth

Surface Location Description

Lat. 36-51-26 N and Long. 81-46-05 W

1/4 of 1/4 of 1/4 of 1/4 of Section Township Range

Locate well in two directions from nearest lines of quarter section and drilling unit

Lat. 36-51-26 N and Long. 81-46-05 W

Surface

Location ___ ft. from (N/S) ___ Line of quarter section

and ___ ft. from (E/W) ___ Line of quarter section.

Well Activity

___ Class I

___ Class II

___ Brine Disposal

___ Enhanced Recovery

___ Hydrocarbon Storage

XXX Class III

___ Other

Well Status

XX Operating

Modification/Conversion

Proposed

Type of Permit

___ Individual

XX Area : Number of Wells 6

Lease Number n/a

Well Number TBC # 1

Submit with this Completion Form the attachments listed in Attachments for Completion Form.

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title (Please type or print)

Jeffrey McCartney, Mgr of Wells

Signature

Date Signed

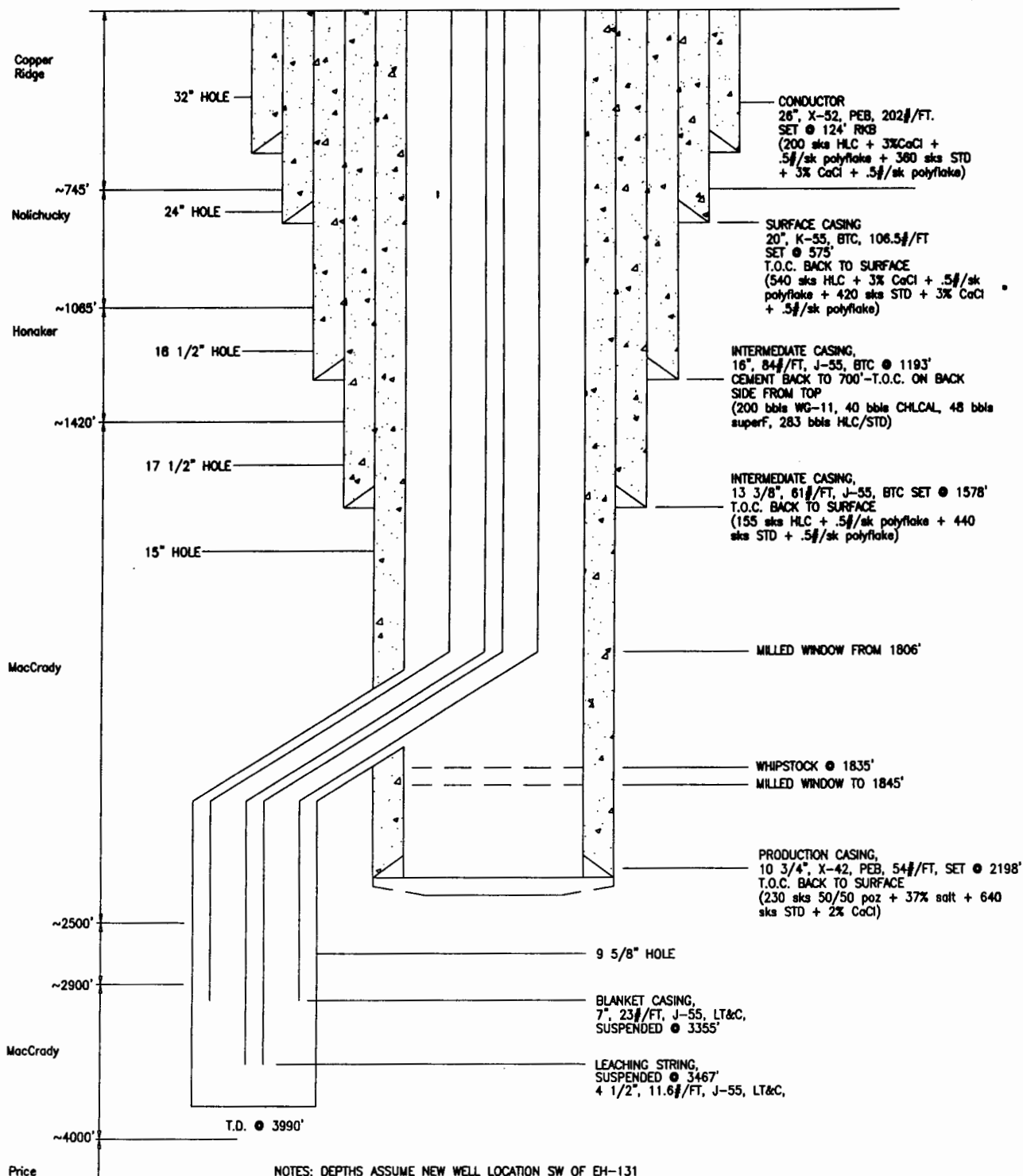
3-18-09

ATTACHMENTS

- A. Present a schematic or other appropriate drawing of the surface and subsurface construction details of the well as built.
- B. Describe the method and results of mechanical integrity testing.
- C. Present the results of that portion of those logs, test, and cores which specifically relate to (1) underground sources of drinking water and the confining zone(s) and (2) the injection and adjacent formations.
- D. Present the status of corrective action on defective wells in the area of review.
- E. Provide to EPA, with the completion report, one final print of all geophysical logs run.

PAPERWORK REDUCTION ACT

The public reporting and record keeping burden for this collection of information is estimated to average 4 hours per well. Burden means the total time, effort, or financial resource expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal Agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to the collection of information; search data sources; complete and review the collection of information; and, transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques to Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW., Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed forms to this address.



NOTES: DEPTHS ASSUME NEW WELL LOCATION SW OF EH-131

NO.	REVISION	DATE	APPR.	<div>UNITEDBRINE</div> <div>SERVICES COMPANY</div>		
A	ISSUED FOR REVIEW	05/31/07	MC			
B	UPDATES & CHANGES	06/27/07	MC	SCALE: NONE	APPROVED: TBC-SALTVILLE	ORDER BY: AP, TBC
C	CHANGES	07/16/07	MC	DATE: 05/31/07	REVISOR: JG	REVIEWED BY:
D	CHANGES	10/19/07	KS	<div>TBC-SALTVILLE</div> <div>WELL SCHEMATIC</div>		
E	CHANGES	11/01/07	KS			
F	CHANGES	11/28/07	KS	<div>BRINE PRODUCTION WELL #1-A</div> <div>WASHINGTON COUNTY, VIRGINIA</div>		
G	CHANGES	02/06/08	JM			
H	UPDATES PER FINAL DRILLING REPORT	06/06/08	KS	<div>TBC-SALTVILLE</div>		
J	UPDATES & CHANGES	02/12/09	JM			
ATTACHED IMAGES				FILENAME - DATE - TIME	WELL SCHEM-BW-#1-J.DWG - 02/12/2009 - 07:55	DWG. NO. BPW-#1-J